

ANXIETY AND DEPRESSION AMONG CANCER PATIENTS

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ABSTRACT

Background: Depression and anxiety are common problems of cancer patients. They affect importantly the patients' health, the decision to be treated, and the outcome of the treatment.

Objectives: This study aimed to assess the prevalence of depression and anxiety among cancer patients being treated at Hue University Hospital in 2019 and to reveal its correlation factors.

Materials and methods: A cross-sectional study was conducted on 104 cancer patients hospitalized for the treatment. Using the CES-DR and GAD-7 scales to assess depression and anxiety disorders. Chi-square Tests and multivariate logistic regression were performed.

Results: The rate of depression (CES-DR) and anxiety (GAD-7) was 77.9% and 63.5%, respectively. Multivariate regression analysis showed the correlation of anxiety among cancer patients to stage III, stage IV of cancer, and the presence of difficulty in paying healthcare costs. Whilst, depression had significant associations with gender (female), late stages of cancer (III, IV), and type of cancer (lung cancer, breast cancer, stomach cancer).

Conclusions: The prevalence of anxiety and depression was found relatively important in our study among cancer patients. Thus, it is necessary to propose solutions to improve the mental health of cancer patients to increase treatment efficiency.

Keywords: Depression, Anxiety, Cancer, Hue city

I. BACKGROUND

Cancer is one of the most causes of death in the world. As of 2018, according to a World Health Organization (WHO) report, cancer caused 9.6 million deaths and currently, 43.8 million people are living with the disease [1]. Depression and anxiety are common psychological disorders in cancer patients [2]. These psychological disorders may be the result of many socio-economic factors, pathological characteristics, hospital fees, unwanted effects

occurring during treatment with some other adverse factors [3]. Alarming figures about depression and anxiety in cancer patients were demonstrated in many studies on this subject [4-6]. These psychological disorders may increase the progression of the disease and negatively influence the treatment and the cancer patient's life [7, 8]. Moreover, suicidal tendency due to depression and anxiety in the group of cancer patients was also reported to be higher than that of the general population [9].

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In Vietnam, cancer is on the rise, and according to the International Agency for Research on Cancer (IARC), under WHO, an estimation of 165,000 new cancer cases, about 115,000 deaths and prevalence of more than 300,000 patients were reported in 2018 [10]. The depression of cancer patients has been studied in Vietnam, with a relatively high rate of 57.7% according to Tran Dinh Thiet et al [11] and a slightly lower rate of 35% was showed in the study of Ngo Thi Kim Yen [12]. To overcome these conditions, studying cancer patients' mental health would be taken into account. However, only a minority of recent Vietnam's studies of cancer patients was mentioned about this issue. Hence, we conducted this study with the aims of determining the prevalence of depression and anxiety among cancer patients and its related factors at the Hue University of Medicine and Pharmacy hospital.

II. METHODOLOGY

2.1. Study subject and methods

A cross-sectional study was conducted on 104 patients recently diagnosed with cancer from April to November 2019, hospitalized for the treatment at the Hue University of Medicine and Pharmacy hospital. Exclusion criteria were the patient's inability to reply to the questions of the interview such as deaf-mutism, coma, and who disagreed to participate were excluded.

2.2. Data collection tools and measurements

According to a structured questionnaire developed by researchers that was split into three sections: *Section A*: Socio-demographic characteristics of participants. *Section B*: Anxiety was assessed by Generalized anxiety disorder-7 (GAD-7) developed by Spitzer RL, Kroenke K, Williams JB, et al. This instrument consists of 7 questions; each question is answered in the time frame of the past 2 weeks with 4 options that ranged from "not at all" to "nearly every day" [13]. GAD-7 total score for the seven items ranges from 0 to

21. Scores of 5, 10, and 15 are taken as the cut-off points for mild, moderate, and severe anxiety, respectively. When used as a screening tool, further evaluation is recommended when the score is 10 or greater. *Section C*: Depression was based on the five points 20-items Center for Epidemiologic Studies Depression Scale-Revised (CESD-R-20). This scale developed by Radloff, L. S.) [14]. For each item, the patient was asked to answer how felt they were over the past week following five options ("not at all or less than one day", "1-2 days", "3-4 days", "5-7 days", "nearly every day for 2 weeks"). CESD-R-20 total score for the 20 items ranges from 0 to 60. A score equal to or above 16 indicates a person at risk for clinical depression.

2.3. Data analysis and statistical methods

Data collected from each individual were subsequently entered into the Epidata 3.1 and SPSS 22 programs by the researchers. Chi-square Test and multivariate logistic regressions were used to reveal the associations between different disease outcomes and potential correlative factors.

2.4. Ethical considerations

The study was approved by the ethical committee of the Hue University of Medicine and Pharmacy. The information of participants was coded anonymously and this study did not violate any rights of the patients.

III. RESULTS

3.1 Socio-demographic characteristics of participants

Overall, within 104 respondents, there were 67 female patients, accounted for 64.4% and 37 remaining patients were male (35.6%). The maximum age was 81 and the minimum age was 39 with the average age was 58.16 ± 8.713 . In terms of occupation, the highest percentage was farmer (46%), followed by elderly people (24%), businessman/ merchant (10.6%), officer (8.7%), other (9.6%) and labour (1%). Out of the total, 94.2% of participants were married and the

remaining was widow or widower (5.8%). There were 53% of patients had low income, 35% of patients had middle income and the rest 12% had a high income. 59% of patients found it difficult to pay for healthcare costs whilst 41% did not face this problem. The majority of participants did not have a family history of mental disorders (89.4%). The mean duration since diagnosis was 15 months \pm 7.7 months. The patients who had their stage III and stage IV of cancer made up respectively 33% and 46%; stage I of cancer made up the least (5%).

3.2. Anxiety and depression in cancer patients and correlated factors

Being assessed with the GAD-7 scales, the number of patients having anxiety was 66 patients (63.5%), out of that, 34 patients had mild anxiety (32.7%), followed by 29 moderate anxiety (27.9%) and 3 severe anxiety (2.9%). Regarding depression based on the CESD-R scales, 81 patients were found to have depression (77.9%) and 23 patients had no clinical symptoms of depression (22.1%).

Table 1: The association of related variables with anxiety in cancer patients

Anxiety		OR	95%CI	p
Gender	Male	1	-	-
	Female	0.645	0.194-2.143	> 0.05
Occupation	Farmer	1	-	-
	Labour	2.10 ⁹	-	> 0.05
	Officer	0.538	0.092 – 3.146	> 0.05
	Retiree, elderly people	0.368	0.094 – 1.44	> 0.05
	Businessman	2.2	0.354 – 13.79	> 0.05
	Other	0.64	0.111 – 3.779	> 0.05
Type of cancer	Liver cancer	1	-	-
	Lung cancer	2.1	0.206 - 22.36	> 0.05
	Rectal cancer	4.4	0.342 - 58.81	> 0.05
	Breast cancer	1.1	0.1 - 13.02	> 0.05
	Stomach cancer	0.6	0.049 - 7.41	> 0.05
	Ovarian cancer	2	0.138 - 30.85	> 0.05
	Hodgkin lymphoma	1	0.065 - 18.075	> 0.05
	Pancreatic cancer	1.1	0.089 - 15.35	> 0.05
Stage of cancer	I	1	-	-
	II	7.5	0.5-109	> 0.05
	III	14	1-172	0.037
	IV	25	2-318	0.012
Having difficulties in paying healthcare cost	No	1	-	-
	Yes	3	1.12 – 8.83	0.029

As shown in Table 1, there were significant relationships between anxiety and the late stage of cancer, whether the patients experienced difficulties with paying for healthcare. Patients had stage III and stage IV of cancer were far more likely to get anxiety than stage I. Namely, patients

having stage III and stage IV of cancer increased odds of anxiety by 14 and 25 times respectively as compared to stage I of cancer. Patients who experienced difficulties in paying for healthcare cost had 3 times the odds of anxiety as compared to those who did not.

Table 2: The association of related variables with depression in cancer patients

Depression		OR	95%CI	p
Gender	Male		1	—
	Female	21.627	1.058 - 441.945	0.046*
Occupation	Farmer	1	—	—
	Labour	62719335.65	—	—
	Officer	0.295	0.011 - 8.120	0.470
	Retiree, elderly	7.416	0.299 - 183.895	0.2121
	Businessman	1.127	0.004 - 283.309	0.966
	Other	0.097	0.006 - 1.584	0.101
Type of cancer	Liver cancer	1	—	—
	Lung cancer	0.015	0 - 0.936	0.046
	Rectal cancer	0.046	0 - 4.578	0.19
	Breast cancer	0.006	0 - 0.647	0.032
	Stomach cancer	0.007	0 - 0.852	0.043
	Ovarian cancer	0.008	0 - 2.187	0.091
	Hodgkin lymphoma	0.716	0 - 67.389	0.885
	Pancreatic cancer	0.014	0 - 1.190	0.060
Stage of cancer	I	1	—	—
	II	0.310	0.004 - 22.907	0.594
	III	67.272	1.469 - 3080.581	0.031
	IV	101.620	2.345 - 4387.764	0.016

As shown in Table 2, there were significant relationships between depression, and the late stages of cancer, gender, several types of cancer. Patients with stage III and stage IV of cancer increased odds of depression by 67 and approximately 102 times respectively as compared to stage I of cancer. Besides, female patients had nearly 22 times the odds of depression as compared to male patients. Also, patients with lung cancer, breast cancer, stomach cancer were observed that were less likely to increase odds of depression than their counterparts with liver cancer, the statistical analysis indicated those ratio odds were 0.015, 0.006, 0.007 respectively.

IV. DISCUSSION

As shown in this study, the rate of anxiety was 63.5% with the highest percentage belonged to mild

anxiety (32.7%). This rate is fairly similar to the study of Novin Nikbakhsh et al in Iran [15]. The rate of depression was roughly 78% which had similarities and differences in comparison to several studies in Vietnam and other countries [4, 5, 11]. These differences can be due to the distribution of stages of cancer of the patient which had a high frequency of stage IV (46%), being nearly twice as their counterparts as in the study of Tran Dinh Thiet (20.5%) [11].

The association between anxiety and the late stages of cancer can be related to the poor physical condition, painful symptoms, tiredness happening in late stages of cancer that can cause anxiety in patients [16]. It is needed to have more proofs in further studies to prove this association in the future. According to several studies earlier, it showed that

healthcare costs associated with psychological distress [17-19]. The same finding was also observed in our study. This might be appropriate because the healthcare fee for cancer treatment would be high while the majority of participants were farmers (46%). As a result, the patient suffered from not only painful disease but also a financial burden and it could increase psychological problems in cancer patients. Besides, there was no significant relationship between anxiety and gender as well as occupation.

Regarding depression, as shown in Table 2, this study indicated that the gender was related to the prevalence of depression among cancer patients, which consistent with the study by Nguyen Cong Hoang with a higher frequency was observed in female patients [20]. Additionally, several studies reported the association between the stage of cancer and depression among cancer patients with advanced-stage who had a higher risk of depression in comparison with those who had early-stage cancer [21].

The study was planned to get more patients

involved with different cancers. Some cancers are relatively rare being treated at our place of our present study such as head and neck cancers, cervical cancers... More participants will be collected after the control of COVID 2020 with our hope to get more reliable and to look through associated factors to the conditions so that we can develop some strategies to intervene with aims to improve the quality of life in terms of mental health for cancer patients.

V. CONCLUSION

The study showed that there was a high prevalence of depression and anxiety among cancer patients. Patients with late stages of cancer and difficulty in paying for healthcare increased the odds of anxiety. Regarding depression, there were significant relationships between depression and gender, several types of cancer, and the late stages of cancer.

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